



SEQUENCE LISTING

<110> ROTIN, Daniela
PHAM, Nam

<120> RAS Activator Nucleic Acid Molecules, Polypeptides and
Methods of Use

<130> DWW-5001-US

<140> 09/911,826
<141> 2000-01-20

<150> 2,259,830
<151> 1999-01-20

<160> 28

<170> PatentIn Ver. 2.1

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Asp Ser Gly Ser Lys Ala Thr Glu Ala Gly Leu Lys Arg Gly Asp Gln		
420	425	430
Ile Leu Glu Val Asn Gly Gln Asn Phe Glu Asn Ile Gln Leu Ser Lys		
435	440	445
Ala Met Glu Ile Leu Arg Asn Asn Thr His Leu Ser Ile Thr Val Lys		
450	455	460
Thr Asn Leu Phe Val Phe Lys Glu Leu Leu Thr Arg Leu Ser Glu Glu		
465	470	475
Lys Arg Asn Gly Ala Pro His Leu Pro Lys Ile Gly Asp Ile Lys Lys		
485	490	495
Ala Ser Arg Tyr Ser Ile Pro Asp Leu Ala Val Asp Val Glu Gln Val		
500	505	510
Ile Gly Leu Glu Lys Val Asn Lys Lys Ser Lys Ala Asn Thr Val Gly		
515	520	525
Gly Arg Asn Lys Leu Lys Lys Ile Leu Asp Lys Thr Arg Ile Ser Ile		
530	535	540
Leu Pro Gln Lys Pro Tyr Asn Asp Ile Gly Ile Gly Gln Ser Gln Asp		
545	550	555
Asp Ser Ile Val Gly Leu Arg Gln Thr Lys His Ile Pro Thr Ala Leu		
565	570	575
Pro Val Ser Gly Thr Leu Ser Ser Asn Pro Asp Leu Leu Gln Ser		
580	585	590
His His Arg Ile Leu Asp Phe Ser Ala Thr Pro Asp Leu Pro Asp Gln		
595	600	605
Val Leu Arg Val Phe Lys Ala Asp Gln Gln Ser Arg Tyr Ile Met Ile		

610	615	620
Ser Lys Asp Thr Thr Ala Lys Glu Val Val Ile Gln Ala Ile Arg Glu		
625	630	635
Phe Ala Val Thr Ala Thr Pro Asp Gln Tyr Ser Leu Cys Glu Val Ser		
645	650	655
Val Thr Pro Glu Gly Val Ile Lys Gln Arg Arg Leu Pro Asp Gln Leu		
660	665	670
Ser Lys Leu Ala Asp Arg Ile Gln Leu Ser Gly Arg Tyr Tyr Leu Lys		
675	680	685
Asn Asn Met Glu Thr Glu Thr Leu Cys Ser Asp Glu Asp Ala Gln Glu		
690	695	700
Leu Leu Arg Glu Ser Gln Ile Ser Leu Leu Gln Leu Ser Thr Val Glu		
705	710	715
Val Ala Thr Gln Leu Ser Met Arg Asn Phe Glu Leu Phe Arg Asn Ile		
725	730	735
Glu Pro Thr Glu Tyr Ile Asp Asp Leu Phe Lys Leu Arg Ser Lys Thr		
740	745	750
Ser Cys Ala Asn Leu Lys Arg Phe Glu Glu Val Ile Asn Gln Glu Thr		
755	760	765
Phe Trp Val Ala Ser Glu Ile Leu Arg Glu Thr Asn Gln Leu Lys Arg		
770	775	780
Met Lys Ile Ile Lys His Phe Ile Lys Ile Ala Leu His Cys Arg Glu		
785	790	795
Cys Lys Asn Phe Asn Ser Met Phe Ala Ile Ile Ser Gly Leu Asn Leu		
805	810	815
Ala Pro Val Ala Arg Leu Arg Thr Trp Glu Lys Leu Pro Asn Lys		
820	825	830
Tyr Glu Lys Leu Phe Gln Asp Leu Gln Asp Leu Phe Asp Pro Ser Arg		
835	840	845
Asn Met Ala Lys Tyr Arg Asn Val Leu Asn Ser Gln Asn Leu Gln Pro		
850	855	860
Pro Ile Ile Pro Leu Phe Pro Val Ile Lys Lys Asp Leu Thr Phe Leu		
865	870	875
His Glu Gly Asn Asp Ser Lys Val Asp Gly Leu Val Asn Phe Glu Lys		
885	890	895
Leu Arg Met Ile Ala Lys Glu Ile Arg His Val Gly Arg Met Ala Ser		
900	905	910
Val Asn Met Asp Pro Ala Leu Met Phe Arg Thr Arg Lys Lys Lys Trp		
915	920	925
Arg Ser Leu Gly Ser Leu Ser Gln Gly Ser Thr Asn Ala Thr Val Leu		
930	935	940
Asp Val Ala Gln Thr Gly Gly His Lys Lys Arg Val Arg Arg Ser Ser		
945	950	955
Phe Leu Asn Ala Lys Lys Leu Tyr Glu Asp Ala Gln Met Ala Arg Lys		
965	970	975
Val Lys Gln Tyr Leu Ser Asn Leu Glu Leu Glu Met Asp Glu Glu Ser		
980	985	990
Leu Gln Thr Leu Ser Leu Gln Cys Glu Pro Ala Thr Asn Thr Leu Pro		
995	1000	1005
Lys Asn Pro Gly Asp Lys Lys Pro Val Lys Ser Glu Thr Ser Pro Val		
1010	1015	1020
Ala Pro Arg Ala Gly Ser Gln Gln Lys Ala Gln Ser Leu Pro Gln Pro		
1025	1030	1035
Gln Gln Gln Pro Pro Pro Ala His Lys Ile Asn Gln Gly Leu Gln Val		
1045	1050	1055
Pro Ala Val Ser Leu Tyr Pro Ser Arg Lys Lys Val Pro Val Lys Asp		

1060	1065	1070
Leu Pro Pro Phe Gly Ile Asn Ser Pro Gln Ala Leu Lys Lys Ile Leu		
1075	1080	1085
Ser Leu Ser Glu Glu Gly Ser Leu Glu Arg His Lys Lys Gln Ala Glu		
1090	1095	1100
Asp Thr Ile Ser Asn Ala Ser Ser Gln Leu Ser Ser Pro Pro Thr Ser		
1105	1110	1115
Pro Gln Ser Ser Pro Arg Lys Gly Tyr Thr Leu Ala Pro Ser Gly Thr		
1125	1130	1135
Val Asp Asn Phe Ser Asp Ser Gly His Ser Glu Ile Ser Ser Arg Ser		
1140	1145	1150
Ser Ile Val Ser Asn Ser Ser Phe Asp Ser Val Pro Val Ser Leu His		
1155	1160	1165
Asp Glu Arg Arg Gln Arg His Ser Val Ser Ile Val Glu Thr Asn Leu		
1170	1175	1180
Gly Met Gly Arg Met Glu Arg Arg Thr Met Ile Glu Pro Asp Gln Tyr		
1185	1190	1195
1200		
Ser Leu Gly Ser Tyr Ala Pro Met Ser Glu Gly Arg Gly Leu Tyr Ala		
1205	1210	1215
Thr Ala Thr Val Ile Ser Ser Pro Ser Thr Glu Glu Leu Ser Gln Asp		
1220	1225	1230
Gln Gly Asp Arg Ala Ser Leu Asp Ala Ala Asp Ser Gly Arg Gly Ser		
1235	1240	1245
Trp Thr Ser Cys Ser Ser Gly Ser His Asp Asn Ile Gln Thr Ile Gln		
1250	1255	1260
His Gln Arg Ser Trp Glu Thr Leu Pro Phe Gly His Thr His Phe Asp		
1265	1270	1275
1280		
Tyr Ser Gly Asp Pro Ala Gly Leu Trp Ala Ser Ser Ser His Met Asp		
1285	1290	1295
Gln Ile Met Phe Ser Asp His Ser Thr Lys Tyr Asn Arg Gln Asn Gln		
1300	1305	1310
Ser Arg Glu Ser Leu Glu Gln Ala Gln Ser Arg Ala Ser Trp Ala Ser		
1315	1320	1325
Ser Thr Gly Tyr Trp Gly Glu Asp Ser Glu Gly Asp Thr Gly Thr Ile		
1330	1335	1340
Lys Arg Arg Gly Gly Lys Asp Val Ser Ile Glu Ala Glu Ser Ser Ser		
1345	1350	1355
1360		
Leu Thr Ser Val Thr Thr Glu Glu Thr Lys Pro Val Pro Met Pro Ala		
1365	1370	1375
His Ile Ala Val Ala Ser Ser Thr Thr Lys Gly Leu Ile Ala Arg Lys		
1380	1385	1390
Glu Gly Arg Tyr Arg Glu Pro Pro Thr Pro Pro Gly Tyr Ile Gly		
1395	1400	1405
Ile Pro Ile Thr Asp Phe Pro Glu Gly His Ser His Pro Ala Arg Lys		
1410	1415	1420
Pro Pro Asp Tyr Asn Val Ala Leu Gln Arg Ser Arg Met Val Ala Arg		
1425	1430	1435
1440		
Ser Ser Asp Thr Ala Gly Pro Ser Ser Val Gln Gln Pro His Gly His		
1445	1450	1455
Pro Thr Ser Ser Arg Pro Val Asn Lys Pro Gln Trp His Lys Pro Asn		
1460	1465	1470
Glu Ser Asp Pro Arg Leu Ala Pro Tyr Gln Ser Gln Gly Phe Ser Thr		
1475	1480	1485
Glu Glu Asp Glu Asp Glu Gln Val Ser Ala Val		
1490	1495	

<210> 3
 <211> 799
 <212> DNA
 <213> Mus musculus

<400> 3
 actaaaggga acaaaagctg gagctccacc gcgggtggcg 60
 cccccgggct gcaggaattc aagcggtggg aaggatgtct 120
 agcatggtgc ccgtgactac agaggaagcc aaacctgtcc 180
 ctatgcctgc ccacatacg 180
 gtgacgcccga gcactaccaa gggactcatc gcacggaagg 240
 aaggcaggta ccgggagccg 240
 cctcccacac ctccaggcta cgtgggcata cccattgccg 300
 atttcccaga agggccttgc 300
 cacccggcca ggaagcccccc ggattacaac gtggccctgc 360
 agcggtcccg catggtgca 360
 cggcccactg aggccccggc accggggccag acgcccgc 420
 ctg ctcg cagccgcagc cagccgc 420
 ggcagcaagc cacagtggca caagccccagc gacgcagacc 480
 cacgc 480
 gcaggcttcg caggagcgga ggaggacgaa gatgaacaag 540
 tgtctgctgt ttgaggcgca 540
 ggctccttga tccacagtga gccacccaaa ggagagcaca 600
 agaagacg 600
 gggccttggc acgcacatct gaggatggt gaccagtttgc 660
 ctccttccc tgcctt 660
 cagcatgggg cttcttctcc ttccccttgc 720
 catgtgaaat actgtgaaaga 720
 aattgcctg gcaacttgca gacttgtgc ttgaaatgca 780
 cagcccagca gcccctgagc 780
 tgctgcctgc cacgtc 799

<210> 4
 <211> 286
 <212> PRT
 <213> Homo sapiens

<400> 4
 Thr Lys Gly Asn Lys Ser Trp Ser Ser Thr Ala Val Ala Ala Ala Leu
 1 5 10 15

Glu	Leu	Val	Asp	Pro	Pro	Gly	Cys	Arg	Asn	Ser	Ser	Gly	Gly	Lys	Asp
20															30

Val	Ser	Ala	Glu	Ala	Glu	Ser	Ser	Ser	Met	Val	Pro	Val	Thr	Thr	Glu
35															45

Glu	Ala	Lys	Pro	Val	Pro	Met	Pro	Ala	His	Ile	Ala	Val	Thr	Pro	Ser
50															60

Thr	Thr	Lys	Gly	Leu	Ile	Ala	Arg	Lys	Glu	Gly	Arg	Tyr	Arg	Glu	Pro
65															80

Pro	Pro	Thr	Pro	Pro	Gly	Tyr	Val	Gly	Ile	Pro	Ile	Ala	Asp	Phe	Pro
85															95

Glu	Gly	Pro	Cys	His	Pro	Ala	Arg	Lys	Pro	Pro	Asp	Tyr	Asn	Val	Ala
100															110

Leu	Gln	Arg	Ser	Arg	Met	Val	Ala	Arg	Pro	Thr	Glu	Ala	Pro	Ala	Pro
115															125

Gly	Gln	Thr	Pro	Pro	Ala	Ala	Ala	Ser	Arg	Pro	Gly	Ser	Lys	Pro	
130															140

Gln Trp His Lys Pro Ser Asp Ala Asp Pro Arg Leu Ala Pro Phe Gln
145 150 155 160

Ala Ala Ser His Ser Gly Thr Ser Pro Ala Thr Gln Thr His Ala Ser
165 170 175

Arg Pro Ser Arg Gln Ala Ser Gln Glu Arg Arg Arg Thr Lys Met Asn
180 185 190

Lys Cys Leu Leu Phe Glu Ala Gln Ala Pro Xaa Ser Thr Val Ser His
195 200 205

Pro Lys Glu Ser Thr Arg Arg Pro Lys Pro Trp Ser Leu Gly Thr
210 215 220

His Ile Xaa Gly Trp Trp Thr Ser Leu Pro Pro Ser Leu Pro Xaa Ser
225 230 235 240

Ser Met Gly Leu Leu Pro Phe Phe Leu Ser Pro Leu His Val Lys
245 250 255

Tyr Cys Glu Glu Ile Ala Leu Ala Leu Cys Arg Leu Val Ala Xaa Asn
260 265 270

Ala Gln Pro Ser Ser Pro Xaa Ala Ala Ala Cys His Val Thr
275 280 285

<210> 5

<211> 245

<212> PRT

<213> Homo sapiens

<400> 5

Leu Lys Gly Thr Lys Ala Gly Ala Pro Pro Arg Trp Arg Pro Leu Xaa
1 5 10 15

Asn Xaa Trp Ile Pro Arg Ala Ala Gly Ile Gln Ala Val Gly Arg Met
20 25 30

Ser Pro Leu Arg Gln Arg Ala Ala Ala Trp Cys Pro Xaa Leu Gln Arg
35 40 45

Lys Pro Asn Leu Ser Leu Cys Leu Pro Thr Xaa Leu Xaa Arg Arg Ala
50 55 60

Leu Pro Arg Asp Ser Ser His Gly Arg Lys Ala Gly Thr Gly Ser Arg
65 70 75 80

Leu Pro His Leu Gln Ala Thr Trp Ala Ser Pro Leu Pro Ile Ser Gln
85 90 95

Lys Gly Leu Ala Thr Arg Pro Gly Ser Pro Arg Ile Thr Thr Trp Pro
100 105 110

Cys Ser Gly Pro Ala Trp Trp His Gly Pro Leu Arg Pro Arg His Arg
 115 120 125

 Ala Arg Arg Arg Leu Gln Pro Gln Pro Ala Gly Arg Arg Leu Arg Arg
 130 135 140

 Ser Gly Gly Arg Arg Xaa Thr Ser Val Cys Cys Leu Arg Arg Arg
 145 150 155 160

 Leu Leu Asp Pro Gln Xaa Ala Thr Gln Arg Arg Ala Gln Glu Asp Val
 165 170 175

 Pro Ser Leu Gly Ala Leu Ala Arg Thr Ser Glu Asp Gly Gly Pro Val
 180 185 190

 Cys Leu Leu Pro Cys Leu Lys Ala Ala Trp Gly Phe Phe Ser Pro Ser
 195 200 205

 Ser Phe Pro Leu Cys Met Xaa Asn Thr Val Lys Lys Leu Pro Trp His
 210 215 220

 Phe Ala Asp Leu Leu Leu Glu Met His Ser Pro Ala Ala Pro Glu Leu
 225 230 235 240

 Leu Pro Ala Thr Ser
 245

<210> 6
 <211> 266
 <212> PRT
 <213> Homo sapiens

<400> 6
 Xaa Arg Glu Gln Lys Leu Glu Leu His Arg Gly Gly Arg Ser Arg
 1 5 10 15

Thr Ser Gly Ser Pro Gly Leu Gln Glu Phe Lys Arg Trp Glu Gly Cys
 20 25 30

Leu Arg Xaa Gly Arg Glu Gln Gln His Gly Ala Arg Asp Tyr Arg Gly
 35 40 45

Ser Gln Thr Cys Pro Tyr Ala Cys Pro His Ser Cys Asp Ala Glu His
 50 55 60

Tyr Gln Gly Thr His Arg Thr Glu Gly Arg Gln Val Pro Gly Ala Ala
 65 70 75 80

Ser His Thr Ser Arg Leu Arg Gly His Pro His Cys Arg Phe Pro Arg
 85 90 95

Arg Ala Leu Pro Pro Gly Gln Glu Ala Pro Gly Leu Gln Arg Gly Pro
 100 105 110

Ala Ala Val Pro His Gly Gly Thr Ala His Xaa Gly Pro Gly Thr Gly

115	120	125
Pro Asp Ala Ala Cys Ser Arg Ser Gln Pro Ala Gly Gln Gln Ala Thr		
130	135	140
Val Ala Gln Ala Gln Arg Arg Arg Pro Thr Pro Arg Ala Leu Pro Gly		
145	150	160
Ala Gly Phe Ala Gly Ala Glu Glu Asp Glu Asp Glu Gln Val Ser Ala		
165	170	175
Val Xaa Gly Ala Gly Ser Leu Ile His Ser Glu Pro Pro Lys Gly Glu		
180	185	190
His Lys Lys Thr Ser Gln Ala Leu Glu Pro Trp His Ala His Leu Arg		
195	200	205
Met Val Asp Gln Phe Ala Ser Phe Pro Ala Leu Lys Gln His Gly Ala		
210	215	220
Ser Ser Pro Leu Leu Pro Phe Pro Phe Ala Cys Glu Ile Leu Xaa Arg		
225	230	235
Asn Cys Pro Gly Thr Leu Gln Thr Cys Cys Leu Lys Cys Thr Ala Gln		
245	250	255
Gln Pro Leu Ser Cys Cys Leu Pro Arg His		
260	265	
<210> 7		
<211> 307		
<212> PRT		
<213> Drosophila melanogaster		
<400> 7		
Ser Asn Val His Phe Leu His Leu Asn Ala Tyr Glu Leu Ala Ile Gln		
1	5	10
Leu Thr Leu Gln Asp Phe Ala Asn Phe Arg Gln Ile Glu Ser Thr Glu		
20	25	30
Tyr Val Asp Glu Leu Phe Glu Leu Arg Ser Arg Tyr Gly Val Pro Met		
35	40	45
Leu Ser Lys Phe Ala Glu Leu Val Asn Arg Glu Met Phe Trp Val Val		
50	55	60
Ser Glu Ile Cys Ala Glu His Asn Ile Val Arg Arg Met Lys Ile Val		
65	70	75
Lys Gln Phe Ile Lys Ile Ala Arg His Cys Lys Glu Cys Arg Asn Phe		
85	90	95
Asn Ser Met Phe Ala Ile Val Ser Gly Leu Gly His Gly Ala Val Ser		
100	105	110

Arg Leu Arg Gln Thr Trp Glu Lys Leu Pro Ser Lys Tyr Gln Arg Leu
 115 120 125
 Phe Asn Asp Leu Gln Asp Leu Met Asp Pro Ser Arg Asn Met Ser Lys
 130 135 140
 Tyr Arg Gln Leu Val Ser Ala Glu Leu Leu Ala Gln His Pro Ile Ile
 145 150 155 160
 Pro Phe Tyr Pro Ile Val Lys Lys Asp Leu Thr Phe Ile His Leu Gly
 165 170 175
 Asn Asp Thr Arg Val Asp Gly Leu Val Asn Phe Glu Lys Leu Arg Met
 180 185 190
 Leu Ala Lys Glu Val Arg Leu Leu Thr His Met Cys Ser Ser Pro Tyr
 195 200 205
 Asp Leu Leu Ser Ile Leu Glu Leu Lys Gly Gln Ser Pro Ser Asn Ala
 210 215 220
 Leu Phe Ser Leu Asn Gln Met Ser Ala Ser Gln Ser Asn Ala Ala Ala
 225 230 235 240
 Gly Thr Val Ile Ala Ala Asn Ala Gly Gln Ala Thr Ile Lys Arg Arg
 245 250 255
 Lys Lys Ser Thr Ala Ala Pro Asn Pro Lys Lys Met Phe Glu Glu Ala
 260 265 270
 Gln Met Val Arg Arg Val Lys Ala Tyr Leu Asn Ser Leu Lys Ile Leu
 275 280 285
 Ser Asp Glu Asp Leu Leu His Lys Phe Ser Leu Glu Cys Glu Pro Ala
 290 295 300
 His Gly Ser
 305

<210> 8
 <211> 270
 <212> PRT
 <213> Homo sapiens

<400> 8
 Ser Ala Glu Gly Leu Asp Leu Val Ser Ala Lys Asp Leu Ala Gly Gln
 1 5 10 15
 Leu Thr Asp His Asp Trp Ser Leu Phe Asn Ser Ile His Gln Val Glu
 20 25 30
 Leu Ile His Tyr Val Leu Gly Pro Gln His Leu Arg Asp Val Thr Thr
 35 40 45

Ala Asn Leu Glu Arg Phe Met Arg Arg Phe Asn Glu Leu Gln Tyr Trp
 50 55 60

Val Ala Thr Glu Leu Cys Leu Cys Pro Val Pro Gly Pro Arg Ala Gln
 65 70 75 80

Leu Leu Arg Lys Phe Ile Lys Leu Ala Ala His Leu Lys Glu Gln Lys
 85 90 95

Asn Leu Asn Ser Phe Phe Ala Val Met Phe Gly Leu Ser Asn Ser Ala
 100 105 110

Ile Ser Arg Leu Ala His Thr Trp Glu Arg Leu Pro His Lys Val Arg
 115 120 125

Lys Leu Tyr Ser Ala Leu Glu Arg Leu Leu Asp Pro Ser Trp Asn His
 130 135 140

Arg Val Tyr Arg Leu Ala Leu Ala Lys Leu Ser Pro Pro Val Ile Pro
 145 150 155 160

Phe Met Pro Leu Leu Lys Asp Met Thr Phe Ile His Glu Gly Asn
 165 170 175

His Thr Leu Val Glu Asn Leu Ile Asn Phe Glu Lys Met Arg Met Met
 180 185 190

Ala Arg Ala Ala Arg Met Leu His His Cys Arg Ser His Asn Pro Val
 195 200 205

Pro Leu Ser Pro Leu Arg Ser Arg Val Ser His Leu His Glu Asp Ser
 210 215 220

Gln Val Ala Arg Ile Ser Thr Cys Ser Glu Gln Ser Leu Ser Thr Arg
 225 230 235 240

Ser Pro Ala Ser Thr Trp Ala Tyr Val Gln Gln Leu Lys Val Ile Asp
 245 250 255

Asn Gln Arg Glu Leu Ser Arg Leu Ser Arg Glu Leu Glu Pro
 260 265 270

<210> 9
 <211> 244
 <212> PRT
 <213> Mus musculus

<400> 9
 Lys Ala Glu Cys Phe Glu Thr Leu Ser Ala Met Glu Leu Ala Glu Gln
 1 5 10 15

Ile Thr Leu Leu Asp His Ile Val Phe Arg Ser Ile Pro Tyr Glu Glu
 20 25 30

Phe Leu Gly Gln Gly Trp Met Lys Leu Asp Lys Asn Glu Arg Thr Pro

35	40	45
Tyr Ile Met Lys Thr Ser Gln His Phe Asn Glu Met Ser Asn Leu Val		
50	55	60
Ala Ser Gln Ile Met Asn Tyr Ala Asp Ile Ser Ser Arg Pro Asn Ala		
65	70	75
80		
Ile Glu Lys Trp Val Ala Val Ala Asp Ile Cys Arg Cys Leu His Asn		
85	90	95
Tyr Asn Gly Val Leu Glu Ile Thr Ser Ala Leu Asn Arg Ser Pro Ile		
100	105	110
Tyr Arg Leu Lys Lys Thr Trp Ala Lys Val Ser Lys Gln Thr Lys Ala		
115	120	125
Leu Met Asp Lys Leu Gln Lys Thr Val Ser Ser Glu Gly Arg Phe Lys		
130	135	140
Asn Leu Arg Glu Thr Leu Lys Asn Cys Asn Pro Pro Ala Val Pro Tyr		
145	150	155
160		
Leu Gly Met Tyr Leu Thr Asp Leu Ala Phe Ile Glu Glu Gly Thr Pro		
165	170	175
Asn Phe Thr Glu Glu Gly Leu Val Asn Phe Ser Lys Met Arg Met Ile		
180	185	190
Ser His Ile Ile Arg Glu Ile Arg Gln Phe Gln Gln Thr Ala Tyr Arg		
195	200	205
Ile Asp Gln Gln Pro Lys Val Ile Gln Tyr Leu Leu Asp Lys Ala Leu		
210	215	220
Val Ile Asp Glu Asp Ser Leu Tyr Glu Leu Ser Leu Lys Ile Glu Pro		
225	230	235
240		
Arg Leu Pro Ala		

<210> 10
 <211> 249
 <212> PRT
 <213> Homo sapiens

<400> 10
 Asp Glu Ile Thr Leu Leu Thr Leu His Pro Leu Glu Leu Ala Arg Gln
 1 5 10 15
 Leu Thr Leu Leu Glu Phe Glu Met Tyr Lys Asn Val Lys Pro Ser Glu
 20 25 30
 Leu Val Gly Ser Pro Trp Thr Lys Lys Asp Lys Glu Val Lys Ser Pro
 35 40 45

Asn	Leu	Leu	Lys	Ile	Met	Lys	His	Thr	Thr	Asn	Val	Thr	Arg	Trp	Ile
50						55						60			
Glu	Lys	Ser	Ile	Thr	Glu	Ala	Glu	Asn	Tyr	Glu	Glu	Arg	Leu	Ala	Ile
65					70					75				80	
Met	Gln	Arg	Ala	Ile	Glu	Val	Met	Met	Val	Met	Leu	Glu	Leu	Asn	Asn
					85				90				95		
Phe	Asn	Gly	Ile	Leu	Ser	Ile	Val	Ala	Ala	Met	Gly	Thr	Ala	Ser	Val
					100				105				110		
Tyr	Arg	Leu	Arg	Trp	Thr	Phe	Gln	Gly	Leu	Pro	Glu	Arg	Tyr	Arg	Lys
					115				120				125		
Phe	Leu	Glu	Glu	Cys	Arg	Glu	Leu	Ser	Asp	Asp	His	Leu	Lys	Lys	Tyr
					130			135				140			
Gln	Glu	Arg	Leu	Arg	Ser	Ile	Asn	Pro	Pro	Cys	Val	Pro	Phe	Phe	Gly
					145			150			155			160	
Arg	Tyr	Leu	Thr	Asn	Ile	Leu	His	Leu	Glu	Glu	Gly	Asn	Pro	Asp	Leu
					165				170				175		
Leu	Ala	Asn	Thr	Glu	Leu	Ile	Asn	Phe	Ser	Lys	Arg	Arg	Lys	Val	Ala
					180				185				190		
Glu	Ile	Ile	Gly	Glu	Ile	Gln	Gln	Tyr	Gln	Asn	Gln	Pro	Tyr	Cys	Leu
					195			200				205			
Asn	Glu	Glu	Ser	Thr	Ile	Arg	Gln	Phe	Phe	Glu	Gln	Leu	Asp	Pro	Phe
					210			215				220			
Asn	Gly	Leu	Ser	Asp	Lys	Gln	Met	Ser	Asp	Tyr	Leu	Tyr	Asn	Glu	Ser
					225			230			235			240	
Leu	Arg	Ile	Glu	Pro	Arg	Gly	Cys	Lys							
					245										
<210>	11														
<211>	243														
<212>	PRT														
<213>	Homo sapiens														
<400>	11														
Val	Ser	Leu	Leu	Phe	Asp	His	Leu	Glu	Pro	Glu	Glu	Leu	Ser	Glu	His
1				5					10				15		
Leu	Thr	Tyr	Leu	Glu	Phe	Lys	Ser	Phe	Arg	Arg	Ile	Ser	Phe	Ser	Asp
					20				25				30		
Tyr	Gln	Asn	Tyr	Leu	Val	Asn	Ser	Cys	Val	Lys	Glu	Asn	Pro	Thr	Met
					35				40				45		

Glu	Arg	Ser	Ile	Ala	Leu	Cys	Asn	Gly	Ile	Ser	Gln	Trp	Val	Gln	Leu
50						55					60				
Met	Val	Leu	Ser	Arg	Pro	Thr	Pro	Gln	Leu	Arg	Ala	Glu	Val	Phe	Ile
65					70				75				80		
Lys	Phe	Ile	Gln	Val	Ala	Gln	Lys	Leu	His	Gln	Leu	Gln	Asn	Phe	Asn
			85					90					95		
Thr	Leu	Met	Ala	Val	Ile	Gly	Gly	Leu	Cys	His	Ser	Ser	Ile	Ser	Arg
		100					105					110			
Leu	Lys	Glu	Thr	Ser	Ser	His	Val	Pro	His	Glu	Ile	Asn	Lys	Val	Leu
		115					120				125				
Gly	Glu	Met	Thr	Glu	Leu	Leu	Ser	Ser	Ser	Arg	Asn	Tyr	Asp	Asn	Tyr
		130				135				140					
Arg	Arg	Ala	Tyr	Gly	Glu	Cys	Thr	Asp	Phe	Lys	Ile	Pro	Ile	Leu	Gly
		145				150			155			160			
Val	His	Leu	Lys	Asp	Leu	Ile	Ser	Leu	Tyr	Glu	Ala	Met	Pro	Asp	Tyr
			165				170				175				
Leu	Glu	Asp	Gly	Lys	Val	Asn	Val	His	Lys	Leu	Leu	Ala	Leu	Tyr	Asn
			180				185				190				
His	Ile	Ser	Glu	Leu	Val	Gln	Leu	Gln	Glu	Val	Ala	Pro	Pro	Leu	Glu
			195				200				205				
Ala	Asn	Lys	Asp	Leu	Val	His	Leu	Leu	Thr	Leu	Ser	Leu	Asp	Leu	Tyr
			210			215			220						
Tyr	Thr	Glu	Asp	Glu	Ile	Tyr	Glu	Leu	Ser	Tyr	Ala	Arg	Glu	Pro	Arg
		225				230			235			240			
Asn	His	Arg													

<210> 12
<211> 48
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: unavailable

<400> 12
Ile Arg Gly Gly Thr Lys Glu Ala Leu Ile Glu His Leu Thr Ser His
1 5 10 15
Glu Leu Val Asp Ala Ala Phe Asn Val Thr Met Leu Ile Thr Phe Arg
20 25 30

Ser Ile Leu Thr Thr Arg Glu Phe Phe Tyr Ala Leu Ile Tyr Arg Tyr

35

40

45

<210> 13
<211> 47
<212> PRT
<213> Mus musculus

<400> 13
Ile Lys Gly Gly Thr Val Val Lys Leu Ile Glu Arg Leu Thr Tyr His
1 5 10 15

Met Tyr Ala Asp Pro Asn Phe Val Arg Thr Phe Leu Thr Tyr Arg Ser
20 25 30

Phe Cys Lys Gln Glu Leu Leu Asn Leu Leu Ile Glu Arg Phe Glu
35 40 45

<210> 14
<211> 48
<212> PRT
<213> Mus musculus

<400> 14
Ile Arg Tyr Ala Ser Val Glu Ala Leu Leu Glu Arg Leu Thr Asp Leu
1 5 10 15

Arg Phe Leu Ser Ile Asp Phe Leu Asn Thr Phe Leu His Thr Tyr Arg
20 25 30

Ile Phe Thr Thr Ala Thr Val Val Leu Ala Lys Leu Ser Asp Ile Tyr
35 40 45

<210> 15
<211> 50
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: unavailable

<400> 15
Val Val Lys Phe Ala Ser Leu Asn Lys Leu Val Glu His Leu Thr His
1 5 10 15

Asp Ser Lys His Asp Leu Gln Phe Leu Lys Thr Phe Leu Met Thr Tyr
20 25 30

Gln Ser Phe Cys Thr Pro Glu Lys Leu Met Ser Lys Leu Gln Gln Arg
35 40 45

Tyr Xaa
50

<210> 16
<211> 77
<212> PRT
<213> Drosophila melanogaster

<400> 16
Leu Thr Arg Ser Ser Arg Asp Glu Pro Leu Asn Phe Arg Ile Val Gly
1 5 10 15

Gly Tyr Glu Leu Arg Gly Val Ala Ile Ala Thr Gly Asn Ala Ala Val
20 25 30

Gly Ile Tyr Ile Ser His Val Glu Pro Gly Ser Lys Ala Gln Asp Val
35 40 45

Gly Leu Lys Arg Gly Asp Gln Ile His Glu Val Asn Gly Gln Ser Leu
50 55 60

Asp His Val Thr Ser Lys Arg Ala Leu Glu Ile Leu Thr
65 70 75

<210> 17
<211> 71
<212> PRT
<213> Homo sapiens

<400> 17
Asn Leu Lys Lys Asp Ala Lys Tyr Gly Leu Gly Phe Gln Ile Ile Gly
1 5 10 15

Gly Glu Lys Met Gly Arg Leu Asp Leu Gly Ile Phe Ile Ser Ser Val
20 25 30

Ala Pro Gly Gly Pro Ala Asp Leu Asp Gly Cys Leu Lys Pro Gly Asp
35 40 45

Arg Leu Ile Ser Val Asn Ser Val Ser Leu Glu Gly Val Ser His His
50 55 60

Ala Ala Ile Glu Ile Leu Gln
65 70

<210> 18
<211> 67
<212> PRT
<213> Homo sapiens

<400> 18
Ile Val Ile His Arg Gly Ser Thr Gly Leu Gly Phe Asn Ile Val Gly
1 5 10 15

Gly Glu Asp Gly Glu Gly Ile Phe Ile Ser Phe Ile Leu Ala Gly Gly
20 25 30

Pro Ala Asp Leu Ser Gly Glu Leu Arg Lys Gly Asp Gln Ile Leu Ser
35 40 45

Val Asn Gly Val Asp Leu Arg Asn Ala Ser His Glu Gln Ala Ala Ile
50 55 60

Ala Leu Lys
65

<210> 19
<211> 68
<212> PRT
<213> Rattus rattus

<400> 19
Val Glu Leu Pro Lys Thr Glu Glu Gly Leu Gly Phe Asn Ile Met Gly
1 5 10 15

Gly Lys Glu Gln Asn Ser Pro Ile Tyr Ile Ser Arg Ile Ile Pro Gly
20 25 30

Gly Ile Ala Asp Arg His Gly Gly Leu Lys Arg Gly Asp Gln Leu Leu
35 40 45

Ser Val Asn Gly Val Ser Val Glu Gly Glu His His Glu Lys Ala Val
50 55 60

Glu Leu Leu Lys
65

<210> 20
<211> 65
<212> PRT
<213> Homo sapiens

<400> 20
Val Lys Val Gln Lys Gly Ser Glu Pro Leu Gly Ile Ser Ile Val Ser
1 5 10 15

Gly Glu Lys Gly Gly Ile Tyr Val Ser Lys Val Thr Val Gly Ser Ile
20 25 30

Ala His Gln Ala Gly Leu Glu Tyr Gly Asp Gln Leu Leu Glu Phe Asn
35 40 45

Gly Ile Asn Leu Arg Ser Ala Thr Glu Gln Gln Ala Arg Leu Ile Ile
50 55 60

Gly
65

<210> 21
<211> 98
<212> PRT
<213> Drosophila melanogaster

<400> 21
Met Val Phe Ala Val Val Asp Lys Ala Gly Thr Val Val Met Ser Asp
1 5 10 15

Gly Glu Glu Leu Asp Ser Trp Ser Val Leu Ile Asn Gly Ala Val Glu
20 25 30

Ile Glu His Ala Asn Gly Ser Arg Glu Glu Leu Gln Met Gly Asp Ser
35 40 45

Phe Gly Ile Leu Pro Thr Met Asp Lys Leu Tyr His Arg Gly Val Met
50 55 60

Arg Thr Lys Cys Asp Asp Cys Gln Phe Val Cys Ile Thr Gln Thr Asp
65 70 75 80

Tyr Tyr Arg Ile Gln His Gln Gly Glu Glu Asn Thr Arg Arg His Glu
85 90 95

Asp Glu

<210> 22
<211> 99
<212> PRT
<213> Homo sapiens

<400> 22
Leu Leu Phe Glu Pro His Ser Lys Ala Gly Thr Val Leu Phe Ser Gln
1 5 10 15

Gly Asp Lys Gly Thr Ser Trp Tyr Ile Ile Trp Lys Gly Ser Val Asn
20 25 30

Val Val Thr His Gly Lys Gly Leu Val Thr Thr Leu His Glu Gly Asp
35 40 45

Asp Phe Gly Gln Leu Ala Leu Val Asn Asp Ala Pro Arg Ala Ala Thr
50 55 60

Ile Ile Leu Arg Glu Asp Asn Cys His Phe Leu Arg Val Asp Lys Gln
65 70 75 80

Asp Phe Asn Arg Ile Ile Lys Asp Val Glu Ala Lys Thr Met Arg Leu
85 90 95

Glu Glu His

<210> 23

<211> 97

<212> PRT

<213> Homo sapiens

<400> 23

Ala Met Phe Pro Val Thr His Ile Ala Gly Glu Thr Val Ile Gln Gln
1 5 10 15

Gly Asn Glu Gly Asp Asn Phe Tyr Val Val Asp Gln Gly Glu Val Asp
20 25 30

Val Tyr Val Asn Gly Glu Trp Val Thr Asn Ile Ser Glu Gly Gly Ser
35 40 45

Phe Gly Glu Leu Ala Leu Ile Tyr Gly Thr Pro Arg Ala Ala Thr Val
50 55 60

Lys Ala Lys Thr Asp Leu Lys Leu Trp Gly Ile Asp Arg Asp Ser Tyr
65 70 75 80

Arg Arg Ile Leu Met Gly Ser Thr Leu Arg Lys Arg Lys Met Tyr Glu
85 90 95

Glu

<210> 24

<211> 97

<212> PRT

<213> Homo sapiens

<400> 24

Cys Met Tyr Gly Arg Asn Tyr Gln Gln Gly Ser Tyr Ile Ile Lys Gln
1 5 10 15

Gly Glu Pro Gly Asn His Ile Phe Val Leu Ala Glu Gly Arg Leu Glu
20 25 30

Val Phe Gln Gly Glu Lys Leu Leu Ser Ser Ile Pro Met Trp Thr Thr
35 40 45

Phe Gly Glu Leu Ala Ile Leu Tyr Asn Cys Thr Arg Thr Ala Ser Val
50 55 60

Lys Ala Ile Thr Asn Val Lys Thr Trp Ala Leu Asp Arg Glu Val Phe
65 70 75 80

Gln Asn Ile Met Arg Arg Thr Ala Gln Ala Arg Asp Glu Gln Tyr Arg
85 90 95

Asn

<210> 25
<211> 103
<212> PRT
<213> Mus musculus

<400> 25
Arg Leu Arg Ser Val Val Tyr Leu Pro Asn Asp Tyr Val Cys Lys Lys
1 5 10 15

Gly Glu Ile Gly Arg Glu Met Tyr Ile Ile Gln Ala Gly Gln Val Gln
20 25 30

Val Leu Gly Gly Pro Asp Gly Lys Ser Val Leu Val Thr Leu Lys Ala
35 40 45

Gly Ser Val Phe Gly Glu Ile Ser Leu Leu Ala Val Gly Gly Asn
50 55 60

Arg Arg Thr Ala Asn Val Val Ala His Gly Phe Thr Asn Leu Phe Ile
65 70 75 80

Leu Asp Lys Asp Leu Asn Glu Ile Leu Val His Tyr Pro Glu Ser
85 90 95

Gln Lys Leu Leu Arg Lys Lys
100

<210> 26
<211> 91
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: unavailable

<400> 26
Arg Glu Asp Phe Glu Ile Ile Arg Val Phe Asp Gly Asn Asn Ser Tyr
1 5 10 15

Arg Ser Gln Ile Ser Arg Asn Ile Val Val Ala Lys His Val Ser Val
20 25 30

Gln Gln Val Arg Asp Ala Ala Leu Arg Arg Phe His Ile Asn Asp Thr
35 40 45

Pro Glu Arg Tyr Tyr Ile Thr Gln Val Val Gly Glu Val Glu Glu
50 55 60

Ile Leu Glu Asp Pro Val Pro Leu Arg Asn Val Lys Arg Pro Glu Gly
65 70 75 80

Lys Arg Ala Gln Ile Phe Ile Arg Tyr Tyr Asp
85 90

<210> 27

<211> 129

<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: unavailable

<400> 27

Ser Ile Leu Val Thr Ser Gln Asp Lys Ala Pro Ser Val Ile Ser Arg
1 5 10 15

Val Leu Lys Lys Asn Asn Arg Asp Ser Ala Val Ala Ser Glu Tyr Glu
20 25 30

Leu Val Gln Leu Leu Pro Gly Glu Arg Glu Leu Thr Ile Pro Ala Ser
35 40 45

Ala Asn Val Phe Tyr Ala Met Asp Gly Ala Ser His Asp Phe Leu Leu
50 55 60

Arg His Gly Glu Gly Pro Leu Leu Leu His Leu Ala Ser Pro Val Ala
65 70 75 80

Arg Leu Pro Gln Glu Leu Leu Arg Val Arg Glu Glu Gly Ala Pro Phe
85 90 95

Pro Gly Ser Arg Pro Gln Gly Gly Arg Leu His Gly His Cys Ser Glu
100 105 110

Glu Glu Ala Pro Leu Ala Tyr Arg Ser His Gly Val His Thr Arg Cys
115 120 125

Gly

<210> 28

<211> 149

<212> PRT

<213> Mus musculus

<400> 28

Gly Gly Lys Asp Val Ser Ala Glu Ala Glu Ser Ser Ser Met Val Pro
1 5 10 15

Val Thr Thr Glu Glu Ala Lys Pro Val Pro Met Pro Ala His Ile Ala
20 25 30

Val Thr Pro Ser Thr Thr Lys Gly Leu Ile Ala Arg Lys Glu Gly Arg
35 40 45

Tyr Arg Glu Pro Pro Pro Thr Pro Pro Gly Tyr Val Gly Ile Pro Ile
50 55 60

Ala Asp Phe Pro Glu Gly Pro Cys His Pro Ala Arg Lys Pro Pro Asp
65 70 75 80

Tyr Asn Val Ala Leu Gln Arg Ser Arg Met Val Ala Arg Pro Thr Glu
85 90 95

Ala Pro Ala Pro Gly Gln Thr Pro Pro Ala Ala Ala Ser Arg Pro
100 105 110

Gly Ser Lys Pro Gln Trp His Lys Pro Ser Asp Ala Asp Pro Arg Leu
115 120 125

Ala Pro Phe Gln Ala Gly Phe Ala Gly Ala Glu Glu Asp Glu Asp Glu
130 135 140

Gln Val Ser Ala Val
145